## UNCLASSIFIED

# AD 411611

### DEFENSE DOCUMENTATION CENTER

FOR

SCIENTIFIC AND TECHNICAL INFORMATION

CAMERON STATION, ALEXANDRIA, VIRGINIA



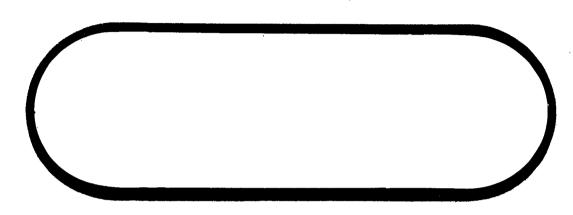
UNCLASSIFIED

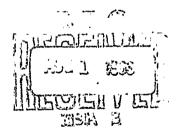
NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.

CATALOGED BY DDC
AS AD NO.

411611

## BOEING





SEATTLE, WASHINGTON

### CODE IDENT NO. 81205

NUMBER D2-7256-2 dated 19 April 1963

TITLE QUALIFICATION TEST REPORT FOR MODES S-133-111-1-9 AND QUALIFICATION SUPPLEMENT LOCKING MECHANISM, LAUNCHER CLOSURE	L SPECIFICATION NT I, ACTUATING AND
MODEL NO. WS-133A CONTRACT NO.	
issue no. $\frac{29}{29}$ issued to $\frac{DD}{2}$	
5-78104-6600-6361 CHARGE NUMBER	8 .
ASTIA may distribute this report to requesting agencies subject to their security agreement following	
UNLIMITED—To all agencies of the Department of Defense and their contractors.  [7] LIMITED—To U. S. Military organizations only.	
This report may be distributed to nonmilitary agencies not approved above subject to Boein NOTE the LIMITED category may be checked only because of schular potential patent, pro	- ''
EQUIPMENT MANAGER G. E. BICKIOTA	2-/8-3
SPECIFICATION CONTROL APPROVAL V.A. Cothuison N.E. Woods	4-18-3
PREPARED BY M. I. Berden	2-15-63
SUPERVISED BY G. E. BICKTOP	Z-/8-3
APPROVED BY J. H. Anderson	5/26/3
APPROVED BY	3/1
APPROVED BY Geo. ToDrakeley	15/63
APPROVAL AND	2-18-3
REV SYMAPPROVAL	12 6 18 7
U3 4267 9035 ORIG. 8/62	

			<u> </u>				-			- Carracontractic Latinac	44.77	L	1 ~ 1 ~ 1	- [-]		: C	
7	岀	5	A	いいし	יט דר	GES	<u> </u>	r=-	-7	!	**	A	DDI	7	AĞ E	; )	
SECTION	ORIG REL PAGE NO.	REV SYM	PAGE NO.	REV SYM G	PAGE NO.	REV SYM	PAGE NO.	REV SYM	SECTION	ORIG REL PAGE NO.	REV SYM	NO.	REV SYM	PAGE NO.	REV SYM	PAGE NO.	REV SYM
U3 480	1 2 3 4 5 6 7 8 9 10 11	. 8/6	2													2-5	142-2

## QUALIFICATION TEST REPORT FOR MODEL SPECIFICATION S-133-111-1-9 AND QUALIFICATION SUPPLEMENT I THEREOF, ACTUATING AND LOCKING MECHANISM, LAUNCHER CLOSURE

l. SCOPE - This qualification report, which is associated with the respective basic specification (S-133-111-1-9, D2-7256) and qualification supplement (D2-7256-1), covers the qualification testing of the Actuating and Locking Mechanism, ATU-26/E. Also covered is the certification of full compliance with the qualification requirements of the foresaid supplement.

#### 2. GENERAL INFORMATION

#### 2.1 References

2.1.1 Basis of Report - The complete basis of this qualification test report is derived from the following non-government documents and drawings.

#### The Boeing Company

10-20969 Rev. H	30 January 1963	Source Control Drawing, Actuating Assembly - Launcher - Closure
D2 <b>-</b> 7256	4 May 1962	Model Specification, Actuating and Locking Mechanism, Launcher Closure (S-133-111-1-9)
D2-7256-1	9 August 1962	Supplement I to Model Specification S-133-111-1-9, Qualification Requirements and Test Methods, Actuating and Locking Mechanism, Launcher Closure

(Application for copies should be addressed to The Boeing Company, Aero-Space Division, P.O. Box 3985, Seattle 24, Washington)

2.1.2 Referenced test reports and other documents - The following non-government documents, publications, drawings, and test reports, of the exact issue shown, form a part of this qualification test report to the extent stated herein:

NOTE: All qualification test reports and data by vendors of the Contractor are available to the procuring activity in files maintained by The Boeing Company, Aero-Space Division, Minuteman, P.O. Box 3985, Seattle 24, Washington

#### 2.1.2.1 The Boeing Company

#### Documents

D2 <b>-</b> 5959	5 February 1963	Functional Test Procedures - Launcher - Closure Actuating and Locking Mechanism and its Major Components
D2-9569 Vol. II, Sec. VIII	30 April 1962	Launcher Closure and Actuating Mechanism Function Integration Test - WDO4
D2-9569 Vol. II, Sec. IX	2 November 1962	Interference Test, Launcher Closure Actua- ting and Locking Mechanism - WDO4.1
D2-9978 Vol. XXVII	18 October 1962	Reduced Data Report - STP III H&D Test WA Ol
<b>T2-</b> 2076	15 February 1963	Shock Test - Talley Industries Actuator and Gas Generator Assy.
Drawings.		
29 <b>-</b> 18553	29 August 1962	Cable Assy - Launcher Closure and Locking Mechanism

(Copies of the above documents may be obtained as noted in 2.1.1)

#### 2.1.2.2 Talley Industries

#### Reports

TPR 5084		2 February 1962	Preproduction Test Report for Actuating Assy - Ballistic - Launcher - Closure
TPR 5002 Rev. F	·	28 September 1962	Acceptance Test Pro- cedure for Actuator, Launcher Closure

D2-7256-2 Page 2

#### 2.1.2.2 Talley Industries (Continued)

#### Reports (Continued)

TPR 5001 Rev. D	27 December 1961	Preproduction Test Pro- cedure for Actuator and Gas Generator Assy
TPR 5146	11 January 1963	Qualification Test Report for Cantridge
Drawings		
5290	6 December 1961	Cartridge Assembly

(Application for copies should be addressed to Talley Industries, Mesa, Arizona.)

#### 2.1.2.3 Tucson Engineering Laboratory

#### Documents

2126.0220/20	1 February 1962	Phase I Report, Pre- production Tests of Actuator Assembly and Gas Generator Assembly
2126.0220/20	17 <b>July</b> 1962	Supplement to Pre- production Tests of Actuator Assembly

(Application for copies should be addressed to Tucson Engineering Laboratory, Aeronautical Systems Division, Hughes Aircraft Company, Tucson, Arizona.)

2.2 Qualification Requirements - The qualification requirements for the Actuating and Locking Mechanism, Launcher Closure are stated in Section 3, "Qualification Requirements", of the qualification supplement (D2-7256-1) which includes coverage of the configuration, performance, environments, and other features of the articles subject to qualification testing.

#### 2.2 (continued)

Correlation is provided between the above noted qualification requirements and the qualification test reporting contained in Section 4 herein, by means of a cross reference (Table I). A certification of full compliance with the requirements of Section 3 of the qualification supplement is provided on page 5.

2.3 Nature of Qualification Test Report - This qualification report is in summary form for each requirement and test, under the consideration that savings in the processing of reports and data are involved. Summarization is presented in Table I, "Summarization and Cross Reference Chart". All items listed in Table I have fully complied with the requirements of Supplement I to the basic specification.

Additional information or data is included in the case of any test which is considered marginal relative to fulfilling the respective requirements. References to subsidiary detailed reports and data are included.

#### CERTIFICATION OF QUALIFICATION

3.0

I hereby certify that the Actuating and Locking Mechanism,

Launcher Closure, Boeing Part No. 25-23712-27, Figure A 1280

has been tested as reported herein, and in my opinion has

evidenced full compliance with the qualification requirements

of Section 3 of Supplement I, dated 9 August 1962 of Model Specification

S-133-111-1-9, dated 4 May 1962.

G. E. Bickford, Group Supervisor,
Umbilical Retract System Design Group
Minuteman, Aero-Space Division
The Boeing Company
Seattle, Washington

#### 4. QUALIFICATION TEST REPORT

4.1 Examination of Product - The Actuating and Locking Mechanism, Launcher Closure was examined for conformance to the drawing requirements applicable to the part number specified in 3.3 of the basic specification, the requirement being based on 3.2 of the qualification supplement. The equipment was found to be in compliance with the requirements.

h.2 Performance Tests - The performance tests and procedures are summarized in Table I as noted in 2.3 herein. The referenced test reports\* for the actuator assembly are primarily those of the vendor-manufacturer, Talley Industries. Also referenced are subsidiary reports\*\* by Tucson Engineering Laboratory under subcontract with the vendor-manufacturer. The referenced qualification data for the complete actuating and locking mechanism, and major components other than the actuator assembly, are those of the contractor, The Boeing Company.

Document D2-5959 and respective reports of tests performed and Drawing 29-18553 (against which quality control inspection was performed) are referenced (2.1.2.1 herein) to establish proof of compliance of the major components of the actuating and locking mechanism, except the actuator assembly, with the qualification requirements of Supplement I to the basic specification. The procedures listed in the aforementioned data are similar to the extent that compliance with the functional test requirements is considered as proof of compliance with the qualification test requirements, and additional testing is not necessary. All components listed in Table I, referenced to D2-5959 and Drawing 29-18553 have successfully completed functional testing as required.

The same

<sup>\*</sup> Including Talley Industries report TPR 5001, Rev. D.

<sup>\*\*</sup> Tucson Engineering Laboratory reports 2126.0220/20 dated 1 February 1962, and 2126.0220/20 dated 17 July 1962.

#### TABLE I

#### (SUMMARIZATION AND CROSS REFERENCE)

Correlation of this Qualification Report D2-7256-2 with the Requirements of Qualification Supplement I (D2-7256-1) to Model Specification S-133-111-1-9 (D2-7256)

NOTE: The Qualification Supplement specifies that the design and test requirements be in accordance with 3.3 and 3.4 of the basic specification. Test methods are specified to be in accordance with 4.3 and 4.4 through 4.4.6 of the basic specification, except 4.4.3.1.5.2.4. In addition, the qualification supplement specifies test requirements and test methods for tactical opening, operation after simulated nuclear overburst and humidity tests of the Gas Generator Assembly.

Requirements and test methods are referenced in the following tabulation.

н <u>الم</u> mi 41 E-1

11.1.1	on T	S-133-1	1	**************************************			
Peet   Qualification   Test   Peet	EH 🚡	. 					
Requirement   Test	Sent Supply	Basic Qualifi	Spec.		Te	<b>2</b>	,,
#1.1 #.4.2.2.1 look Retract		D2-7 Requirement	256 Test	Test Title	Accomp Document	Lished Paragraph	Comments
## 1.1. #		١,	0	1			
## 1.2		•	* V * V		02-5959	Sec.	m
4,4.2.3.1 Rocker Arm Retr. 12-5999 6.4 Sec. 2 4,5.2.4 4,4.2.3.1 Rocker Arm Retr. 12-5999 6.4 Sec. 2 4,5.2.5 Piston Ext. 29-18539 6.4 Sec. 2 4,6.2.5 Piston Pes. Press. TRR 5084 5.2 4,4.2.5.1 Piston Pes. Proof TRR 5084 5.2 4,4.2.5.2 Piston Pes. Proof TRR 5084 5.2 4,4.2.5.4 Protion TRR 5084 5.3 4,4.2.5.5 Piston Pes. Proof TRR 5084 5.3 4,4.2.5.6 Ult. Load TRR 5084 5.3 4,4.2.5.6 Ult. Load TRR 5084 4.1.3 4,5.1.1 4,4.2.6.1.2 Discipling TRR 5084 4.1.3 4,5.1.1 4,4.2.6.1.2 Discipling TRR 5084 4.1.3 4,5.1.1 4,4.2.6.1.3 Discipling TRR 5084 4.1.3 4,5.1.1 4,4.2.6.1.4 No. Fire TRR 5084 4.1.3 4,5.1.1 4,4.2.6.1.5 Discipling TRR 5084 4.1.3 4,5.2.1 Alltitude TRR 5084 4.1.3 4,5.2.2 4,4.3.1.5.2 Gradient TRR 5146 5.3 4,5.2.4 4,3.1.5.3 Gradient TRR 5146 5.3 4,4.2.6.2.3 4,4.2.6.2.3 Maintenance Limits TRR 5146 5.3 4,4.2.6.2.3 4,4.2.6.3 Maintenance Limits TRR 5146 5.3 4,4.2.6.3 Maintenance TRR 5146 5.3 4,4.3.1.5.1 Power TRR 5146 5.3 4,4.3.1.5.2 Temperature TRR 5146 5.3 4,4.3.1.5.3 Maintenance TRR 5146 5.3 4,4.3.1.5.3 Maintenance TRR 5146 5.3 4,4.3.1.5.3 Maintenance TRR 5146 5.3 4,4.3.1.5.1 4,4.3.1.5.1 Divertion TRR 5146 5.3 4,4.3.1.5.1 4,4.3.1.5.1 Divertion TRR 5146 5.3 4,4.3.1.5.1 4,4.3.1.5.1 TRR 5146 5.3 5.2.4 5.3.4 5.3 5.1.4 5,4.3.1 TRR 5146 5.3 5.2.4 5,7.4 5,7.5 TRR 5146 5.3 5.2.4 5,7.5 5,7.5 TRR 5146 5.3 5.2.4 5,7.5 5,7.5 TRR 5146 5.3 5.2.4 5,7.5 5,7.5		• T • T •	+. 2. 2.	Reseat	D2-5959	Sec.	w
4.2.2		4.2	+.2.3.	Arm	D2-5959	Sec	, ъс
4.3 4.4.2.4 Cable Assy.  4.3 4.4.2.4 Burst Press.  4.4.2.5.1 Burst Press.  4.4.2.5.2 Paston Pes. Press.  4.4.2.5.3 Paston Pes. Press.  4.4.2.5.4 Power Press.  7 PR 5084 5.2  7 PR 5084 5.2  7 PR 5084 5.2  7 PR 5084 5.1  7 PR 5082 5.1  7 PR 5084 4.1.2  7 PR 5084 4.1.2  7 PR 5084 4.1.2  7 PR 5084 4.1.2  7 PR 5084 4.1.3  7 PR		.4.2.	+.2.3.		D2-5959	Sec.	/ v
4,4,1         4,4.2.5.1         Burst Press.         TPR 5084         5.2           4,4,2         4,4.2.5.2         Paston Pos. Proof         TPR 5084         5.2           4,4.2.5.4         Paston Pos. Proof         TPR 5084         5.2           4,4.2.5.5         Friction         TPR 5082         5.3           4,4.4.2.5.6         Utt. Load         TPR 5082         5.3           4,4.2.5.6         Utt. Load         TPR 5084         5.3           4,4.2.6         Stroking         TPR 5084         4.1.2           4,5.1.1         4,4.2.6         Delectric Str.         TPR 5084         4.1.4           4,5.1.2         H.4.2.6         H.3.2         H.3.5         H.3.5           4,5.1.3         H.4.2.6         H.3.5         H.3.5         H.3.5           4,5.1.5         H.4.2.6         H.3.5         H.3.5         H.3.5           4,5.1.5         H.4.2.6         Alltitude         TPR 5146         3.4.5           4,5.2.5         H.4.2.6         H.4.2.6         H.4.2.6         H.4.2.6           4,5.2.5         H.4.2.6         H.4.2.6         H.4.2.6         H.4.2.6           4,5.2.5         H.4.2.6         H.4.2.6         H.4.2.6         H.4.2.6 <td></td> <td></td> <td>4.2.4</td> <td>Cable Assv.</td> <td>7777 7777 - 00</td> <td></td> <td>\ r</td>			4.2.4	Cable Assv.	7777 7777 - 00		\ r
### ### ### ### ### ### ### ### ### ##		4.4	ر د د		100 T T T T T T T T T T T T T T T T T T		^ \
4.4.2.5.7 Piston Pes. Froof TPR 5004 4.4.2.5.4 Piston Pes. Proof TPR 5002 4.4.2.5.4 Piston Pes. Proof TPR 5002 4.4.2.5.6 Ult. Lead TPR 5002 4.4.2.5.1 Lead TPR 5002 4.4.2.5.1 Circuit Resist. TPR 5004 4.5.1.2 Lead TPR 5004 4.2.5.1.3 Circuit Resist. TPR 5004 4.2.5.1.3 Lead TPR 5004 4.2.5.1.4 No Fire TPR 5084 4.2.5.1.4 No Fire TPR 5084 4.2.5.1.4 No Fire TPR 5084 4.2.5.1.5 Lead TPR 5084 4.2.5.1.6 Lead TPR 5084 4.2.5.1.6 Lead TPR 5084 4.3.1.5.2 Stabilized Cond. TPR 5084 4.3.1.5.2 Stabilized Cond. TPR 5146 4.5.2.3.1 Lead TPR 5146 4.2.5.3.2 Lead TPR 5146 4.3.1.5.3 Stabilized Cond. TPR 5146 4.3.1.5.3 Naintenance Limits TPR 5146 4.3.1.5.3 Temperature TPR 5146 4.3.1.5.3 Temperature TPR 5146 4.3.1.5.3 Temperature TPR 5146 4.4.3.1.5.3 Temperature TPR 5146 4.4.3.1.5.3 Temperature TPR 5146 4.4.3.1.5.1 Temperature TPR 5146 5.1.1 Lead TPR 5146 5.1.2 Lead TPR 5146 5.1.3 Temperature TPR 5146 5.1.4 Lead TPR 5146 5.1.5 Lead TPR 5146		4 4		E SE	TFR 2004	٠, ر	۰۵
### ### ### ### ### ### ### ### ### ##		• • • •		0 0 1			٥
4.4.5 4.4.2.5.4 Power Req 'd TPR 5084 5.1 4.4.6 4.4.2.5.5 Striction 4.4.6 4.4.2.5.7 Stroking 4.4.6 4.4.2.6.1.2 Carouit Resist. TPR 5082 5.3.4 4.5.1.2 4.4.2.6.1.2 Dislocation Str. TPR 5084 4.1.2 4.5.1.2 4.4.2.6.1.2 Dislocation Str. TPR 5084 4.1.3 4.5.1.4 4.4.2.6.1.2 Dislocation Str. TPR 5084 4.1.5 4.5.1.4 4.4.2.6.1.5 Elect. Disch. TPR 5084 4.1.5 4.5.1.6 4.4.2.6.1.6 Voltage & Curr. Sens. TPR 5084 4.1.6 4.5.1.6 4.4.2.6.1.7 Militade TPR 5146 5.5 4.5.2.3.1 4.4.3.1.5.2 Stabilized Cond. TPR 5146 5.5 4.5.2.5.1 4.4.3.1.5.1 Performance Limits TPR 5146 5.3 4.4.2.6.2.2 Handle Str. TPR 5082 5.2 4.4.2.6.2.2 Maintenance Limits TPR 5146 5.3 4.4.2.6.2.2 Maintenance Limits TPR 5146 5.3 4.4.2.6.2.2 Handle TPR 5146 5.3 4.4.2.6.2.2 Handle TPR 5146 5.3 4.4.2.6.2.2 Handle TPR 5146 5.3 4.4.3.1.5.2 Temperature TPR 5146 5.4 4.5.3.1.5.3 Maintenance TPR 5146 5.4 4.4.3.1.5.3 Temperature TPR 5146 5.4 4.4.3.1.5 Temperature TPR 5146 5.4		-	1.2.5.			•	М
4.4.4         4.4.2.5.5         Friction         TPR 5002         3.3.4           4.4.5         4.4.2.5.6         UT. Load         TPR 5084         5.3           4.4.5         5.1.1         4.4.2.6.1.2         Disclosing         TPR 5084         4.1.3           4.5.1.1         4.4.2.6.1.2         Inselectric Str.         TPR 5084         4.1.3           4.5.1.3         4.4.2.6.1.3         Inselectric Str.         TPR 5084         4.1.5           4.5.1.5         4.4.2.6.1.4         No Fire         TPR 5084         4.1.6           4.5.1.5         4.4.2.6.1.5         Elect. Disch.         TPR 5084         4.1.6           4.5.1.5         4.4.2.6.1.5         Altitude         TPR 5084         4.1.6           4.5.1.5         4.4.2.6.1.5         Altitude         TPR 5146         3.6           4.5.2.3         4.4.2.6.1.5         Gradient         TPR 5146         3.6           4.5.2.3.         4.4.3.1.5.1         Performance Limits         TPR 5146         3.5           4.5.2.3.         4.4.3.1.5.1         Power         TPR 5146         3.5           4.5.2.4         4.4.2.6.2         Maintenance         TPR 5146         3.6           4.4.3.1.5.2         Maintenance         TPR 5146		.4.4.	+.2.5.	Power Req'd		5.1	. N
4.4.5 4.4.2.5.6 Ult. Lead TPR 5084 5.5 4.4.2.5.7 Stroking TPR 5002 5.5.4 4.1.2.5.1.2 Ult. Lead TPR 5002 5.5.4 4.1.2.5.1.2 Ult. Lead TPR 5002 5.5.4 4.1.2.5.1.2 Ult. Lead TPR 5002 5.5.4 4.1.2.5.1.2 Ult. Resist. TPR 5084 4.1.2.2.1.3 Insul. Resist. TPR 5084 4.1.2.5 Ult. Resist. TPR 5084 4.1.2.5 Ult. Rect. Ult. Resist. TPR 5084 4.1.2.5 Ult. Rect. Ult. Rect. Ult. Resist. TPR 5084 4.1.2.5 Ult. Rect. Ult. Ult. Rect. Ult. Ult. Rect. Ult. Ult. Rect. Ult. Ult. Ult. Ult. Ult. Ult. Ult. Ul		.4.4.	+.2.5	Friction			ı M
4.4.6 4.4.2.5.7 stroking TPR 5002 5.3.4 4.5.1.1 4.4.2.6.1.1 Circuit Resist. TPR 5084 4.1.2 4.5.1.2 4.4.2.6.1.3 Insul. Resist. TPR 5084 4.1.4 4.5.1.3 4.4.2.6.1.3 Insul. Resist. TPR 5084 4.1.4 4.5.1.4 4.4.2.6.1.4 No Fire TPR 5084 4.1.6 4.5.1.5 4.4.2.6.1.6 TPR 5084 4.1.6 4.5.1.7 4.4.2.6.1.6 All-Fire TPR 5084 4.1.6 4.5.1.7 4.4.2.6.1.7 All-Fire TPR 5084 4.1.8 4.5.1.7 4.4.3.1.5.2 Stabilized Cond. TPR 5146 5.4.5 4.5.2.3 4.4.3.1.5.3 Stabilized Cond. TPR 5146 5.4.5 4.5.2.3 4.4.3.1.5.3 Performance TPR 5146 5.3.4 4.5.2.3 4.4.3.1.5.1 Performance Limits TPR 5146 5.3.4 4.5.2.6.1 Power TPR 5002 5.2.4 4.5.2.6.2 Maintenance TPR 5146 5.2.4 4.4.3.1.5.2 Maintenance TPR 5146 5.3.4 4.4.3.1.5.2 Temperature TPR 5146 5.2.4 4.4.3.1.5.2 Temperature TPR 5002 5.2.4 4.4.3.1.5.2 Temperature TPR 5002 5.2.4 4.4.3.1.5.2 Temperature TPR 5004 4.2.3.8 5.5 4.4.3.1.5.1 TPR 5004 4.2.3.8 5.1.1 4.4.3.1.5.2 Altitude TPR 5046 5.4.5 4.4.3.1.5.1 TPR 5046 5.4.5 4.4.3.1.5.1 TPR 5046 5.4.5 4.4.3.1.5.1 TPR 5046 5.4.5 4.4.3.1.5.2 Altitude TPR 5046 5.4.5 4.4.3.1.5.1 TPR 5046 5.4.5 4.4.3.1.5.2 TPR 5046 5.4.5 4.4.3.1.5.1 TPR 5046 5.4.5 4.4.3.1.5.1 TPR 5046 5.4.5 4.4.3.1.5.1 TPR 5046 5.4.5 4.4.3.1.5.2 TPR 5046 5.4.5 4.4.3.1.5.1 TPR 5046 5.4.5 4.4.3.1.5.2 TPR 5046 5.4.5 4.4.3.1.5 TPR 5046 5.5 4.4.3.1.5 TPR 5046 5.5	,	4.4.	4.2.5	Ult. Lead			, ч
4.5.1.1		.4.4.	+ 2.5	Stroking			אכ
4.5.1.2 4.4.2.6.1.2 Dielectric Str. TPR 5084 4.1.2 4.5.1.3 4.4.2.6.1.3 Ingul. Regist. TPR 5084 4.1.3 4.5.1.4 4.4.2.6.1.5 Ingul. Regist. TPR 5084 4.1.5 4.5.1.5 4.4.2.6.1.5 Ingul. Regist. TPR 5084 4.1.6 4.5.1.6 4.4.2.6.1.7 All-Fire TPR 5084 4.1.6 4.5.2.2 4.4.3.1.5.2 Stabilized Cond. TPR 5146 3.6 4.5.2.3.1 4.4.3.1.5.2 Stabilized Cond. TPR 5146 3.5 4.5.2.3.1 4.4.3.1.5.2 Performance Limits TPR 5146 3.5 4.5.2.3.2 4.4.2.6.2.2 Maintenance Limits TPR 5146 3.3 4.5.2.4 4.4.2.6.2.2 Maintenance Limits TPR 5146 3.3 4.5.4 4.4.2.6.2.2 Maintenance TPR 5146 3.3 4.4.2.6.2.2 Maintenance TPR 5146 3.3 4.4.2.6.2.2 Maintenance TPR 5146 3.3 4.4.2.6.2.3 Maintenance TPR 5146 3.3 4.4.2.6.2.3 Maintenance TPR 5146 3.3 4.4.2.6.3 Maintenance TPR 5146 3.4.3 5.1.1 4.4.3.1.5		4 5 7	7			+ • · · · ·	<b>~</b> (
#551.5 #.e.561.2 Insul. Resist. TPR 5084 #.1.5 #551.5 #.e.561.5 Insul. Resist. TPR 5084 #.1.6 #551.5 #.e.561.5 Insul. Resist. TPR 5084 #.1.6 #551.5 #.e.561.6 No. Fire TPR 5084 #.1.6 #551.6 #.e.561.6 No. Fire TPR 5084 #.1.7 #551.6 #.e.561.7 All-Fire TPR 5084 #.1.7 #552.2 #.e.561.5 Stabilized Cond. TPR 5146 3.4.5 #552.3 #.e.5.1.5.3 Gradient TPR 5146 3.4.5 #552.3 #.e.5.1.5.1 Performance Limits TPR 5146 3.5 #552.6 #.e.562.1 Power TPR 5146 3.5 #552.6 #.e.562.2 Power TPR 5146 3.5 #4.e.562.2 Maintenance TPR 5146 3.5 #4.e.562.2 Maintenance TPR 5146 3.5 #4.e.562.2 Maintenance TPR 5146 3.7 #4.e.562.3 Maintenance TPR 5146 3.7 #4.e.562.3 Maintenance TPR 5146 3.7 #4.e.562.3 Maintenance TPR 5146 3.7 #4.e.51.5.2 Maintenance TPR 5146 3.7 #4.e.51.5 Temperature TPR 5146 3.4.3 #4.e.51.5 Temperature TPR 5146 3.7 #4.e.51.5 Temperature TPR 5146 3.4.3 #4.e.51.5 Temperature TPR 5146 3.7 #4.e.51.5 Temperature TPR 5146 3.4.3		- T	7. V. V. V.	Official Resist.		7-1-4	<b>~</b> 1
4.5.1.5		****	** K** O***	Dielectric Str.		4.1.3	7
#.51.4	•	.4.2.T.	+.2.6.1.	Insul. Resist.		4.1.4	~
4.5.1.5		.4.5.1.	4.2.6.1.	No Fire		4.1.5	2
4.5.1.6		4.5.1.	4.2.6.1.	Elect. Disch.		4-1-6	۱۸
4.5.1.7		4.5.1	4.2.6.1.	S. Curr.		7 1 7	1 (
4.5.2.2 4.4.3.2 Altitude 4.5.2.3.1 4.4.3.2.5 Stabilized Cond. TPR 5146 5.2.3.2 4.4.3.1.5.2.5 Stabilized Cond. TPR 5146 5.2.3.2 4.4.3.1.5.3 Gradient 4.5.2.3.2 4.4.3.1.5.1 Performance Limits TPR 5146 5.3.2.4 4.4.2.6.2.2 Amintenance Limits TPR 5002 5.2.4 4.4.2.6.2.3 Maintenance TPR 5002 5.2.4 4.4.3.1.5.2 Temperature TPR 5146 5.1.1 4.4.3.1.5.1 4.4.3.1.5.1 6.4.3.1.5.2 Altitude 5.1.2 4.4.3.1.5.1 4.4.3.1.5.1 6.4.3.1.5.2 Altitude 6.1.5 4.4.3.1.5.1 4.4.3.1.5.1 7.7.7 7.7 7.7 7.7 7.7 7.7 7.7 7.7 7.7 7		4.5.1	1-2-6-1			α - 4	u c
4.5.2.3.1 4.4.3.1.5.2.5 Stabilized Cond. TPR 5146 3.4.5. 4.5.2.3.2 4.4.3.1.5.2.5 Stabilized Cond. TPR 5146 3.5. 4.5. 4.5.2.6.1 4.4.3.1.5.1 Performance Limits TPR 5146 3.3. 4.5. 4.5.2.6.1 4.4.3.1.5.1 Performance Limits TPR 5146 3.3. 4.5. 4.5. 4.5.2.6.2.1 Power TPR 5146 3.3. 4.5. 4.4.2.6.2.2 Maintenance TPR 5002 3.2.4 4.4.2.6.2.3 Maintenance TPR 5002 3.2.4 5.1.1 4.4.3.1.5.2.5 Temperature TPR 5146 3.7. 4.4.3.1.5.2 4.4.3.1.5.2 Altitude TPR 5084 4.2.3.8 5.5 5.1.4 4.4.3.1.5.1		4.5.7	7.7.7	∆1+1+100		0 1 7 8	V -
#.5.2.5.1		4 7 7 4	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1. 1 /	+ -
4.5.2.5.2 4.4.5.1.5.3 Gradient 4.5.2.5.2 4.4.5.1.5.1 Performance 4.5.2.6.1 4.4.5.1.5.1 Performance 4.5.2.6.1 4.4.2.6.2.1 Power 4.5.3 4.4.2.6.2.2 Maintenance 5.1.1 4.4.2.6.3 Maintenance 4.4.2.6.3 Maintenance 4.4.3.1.5.2 Temperature 6.4.3.1.5.2 Temperature 7.7. 7.7. 7.7. 7.7. 7.7. 7.7. 7.7. 7.7		<b>し・ハ・ノ・ナ・</b>	• *• >• I • Z • Z • Z •			5.4.5.	<b>.</b> †
#.5.2.4		4.5.2.3	1.3.1.5	Gradient		3.5	<b>-</b> ‡
4.5.2.6.1 4.4.31.5.1 Performance Limits TPR 5146 5.3. 4.4.2.6.2.1 Power TPR 5146 5.3. 4.4.2.6.2.2 Administration TPR 5146 5.3. 4.4.2.6.2.3 Maintenance TPR 5002 5.2.4 5.1.1 4.4.3.1.5.2 Temperature TPR 5146 5.7. 4.4.3.1.5.2 Temperature TPR 5146 5.7. 4.4.3.1.5.1 4.4.3.1.5.1 4.4.3.1.5.1 4.4.3.1.5.1 4.4.3.1.5.1 4.4.3.1.5.1 4.4.3.1.5.1 5.2.4.3 TPR 5146 5.4.2 TPR 5146 5.		4.5.2	+.3.1.5	Performance		3.35	7
4.5.3 4.4.2.6.2.1 Power  4.5.4 4.4.2.6.2.3 Maintenance 5.1.1 4.4.3.1.5.2 Temperature 7.1.1 4.4.3.1.5.1  4.4.3.1.5.1  4.4.3.1.5.1  4.4.3.1.5.1  4.4.3.1.5.1  4.4.3.1.5.2  4.4.3.1.5.1  4.4.3.1.5.1  4.4.3.1.5.1  4.4.3.1.5.2  5.1.2  4.4.3.1.5.1  4.4.3.1.5.1  5.1.2  4.4.3.1.5.2  7.7.  7.		.4.5.2.6.	4.3.1.5			7.7	-#
4.4.2.6.2.2 4.4.2.6.2.3 4.4.2.6.2.3 4.4.2.6.2.3 Maintenance 5.1.1 4.4.3.1.5.2 4.4.3.1.5.2 4.4.3.1.5.1 4.4.3.1.5.1 4.4.3.1.5.2 4.4.3.1.3 4.4.3.1.3		4.5	4.2.6.2	Power		, K	-4
4.4.2.6.2.3 4.5.4 4.4.2.6.2.3 Maintenance 5.1.1 4.4.3.1.5.2,5 Temperature 7PR 5002 3.2.4 3.7. 7PR 5146 3.7. 4.4.3.1.5.1 4.4.3.1.5.1 4.4.3.1.5.1 4.4.3.1.2 7PR 5084 4.2.3.8 5.5 7.2. 4.4.3.1.5 4.4.3.1.5 5.1.2 4.4.3.1.2 7PR 5084 7PR 5084 7PR 5084 5.1.4 7PR 5146 7.4.2 7.4.2 7.4.2 7.4.3			4.2.6.2.		•	, ,	,
#.5.4			4.2.6.2.		•		
5.1.1 4.4.3.1.5.2.5 Temperature TPR 5146 3.7.  4.4.3.1.5.2 4.4.3.1.5.1 4.4.3.1.5.1 4.4.3.1.1 4.4.3.1.2 4.4.3.1.2 4.4.3.1.2 7PR.5146 3.4.2 5.1.4 7PR 5084 4.2.3.8 5.5 7.6.1.4 7PR 5084 4.2.3.8 5.5		4.5	4.2.6.3	Maintenance			М
4.4.3.1.5.3 4.4.3.1.5.3 4.4.3.1.5.1 4.4.3.1.5.1 5.1.2 4.4.3.1.2 4.4.3.1.2 7PR.5146 5.1.4 4.4.3.1.2 7PR.5146 5.1.4 4.4.3.3.8 5.5 TPR 5084 4.2.3.8 5.5 TPR 5146 5.1.4 4.4.3.1.2 7.4.2 7.4.2 7.4.2 7.4.2 7.4.2 7.4.3		.5.1.	+.3.1.5.2.	Temperature			\- <del>-</del> 4
4.4.3.1.5.2 4.4.3.1.5.1 4.4.3.1.5.1 5.1.2 4.4.3.1.5.2 Altitude TPR.5146 3.4.2 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.4 5.1.5 5.1			4.3.1.5.3			•	+
6.1.2 4.4.3.1.5.1 4.4.3.1.5.2 Altitude TPR 5084 4.2.3.8 5.5 5.1.4 4.4.3.1.2 Vibration TPR 5146 3.4.2 5.4.2 5.1.4 4.4.3.1.2 Vibration TPR 5146 3.4.2 5.4.2 5.5 5.1.4 5.1.5 5.1.4 5.1.5 5.1.4 5.1.5 5.1.4 5.1.5 5.1.4 5.1.5 5.1.4 5.1.5 5.1.4 5.1.5 5.1.4 5.1.5 5.1.4 5.1.5 5.1.4 5.1.5 5.1.			4. 7. 1. 5.				
5.1.2 4.4.3.1.5.1 4.4.3.1.5.2 Altitude TPR.5146 3.4.3 5.5.1.4 4.4.3.1.2 Vibration TPR 5084 4.2.3.8 5.5 5.1.4 4.4.3.1.2 Vibration TPR 5146 3.4.2 5.5 5.1.5 5.			\ K				
5.1.2 4.4.3.1.5.1 4.4.3.1.2 Altitude TPR.5146 3.4.3 5.1.4 4.4.3.1.2 Vibration TPR 5084 4.2.3.8 5.5 5.1.4 4.4.3.1.2 Vibration TPR 5146 3.4.2			-				
5.1.2 4.4.3.1.5.2.3 Altitude TPR.5146 3.4.3 5.1.4 4.4.3.1.2 Vibration TPR 5084 4.2.3.8 5.5 TPR 5146 3.4.2			7. 7. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.				
5.1.4 4.4.3.1.2 Vibration TPR 5084 4.2.3.8 5.5 TPR 5146 3.4.2		r u	**************************************	1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T		! -	•
7.1.5 L L Z 1 Z Cand Gand Danat The 5146 3.4.2			+. 2. 1. 2. K.	Altiude	TPR 5146		4
1.P.R. 5.4.2 S.4.2		• 5• £•	4.5.1.	Vibration		Ŋ	ι <b>Λ</b> .
		ر د	2 1 2 1/			N. 4.V.	<b>.</b>

D2-7256-2 Page 8

TABLE I (cont; ed)

		TABL	TABLE 1 (cont.) eu/		•	ير ه
S-133-111-1-9 Basic Spec.	S-155-111-1-9 Basic Spec. Qualification	133-111-1-9 Basic Spec. alification		Test	44	٠
Requirement	D2-7256		Test	Accomplished	ished	. :
D2-7256-1	Requirement	Test	Title	Document	Paragraph	Comments
3.4	3.5.1.6	4.4.3.1.4	Shock	TPR-5084 T2-2076	<b>5•</b> 6	,700.4 =
3.4	3.5.1.7	4.4.3.1.5.4	Life	TPR 5146	3.7	t - <del>1</del>
3.4	3.5.2.1	4.4.3.2	Temperature	TPR 5146	3.6	<b>-</b>
3.4	3.5.2.2	4.4.3.2	Altitude	TPR 5146	3.6	4
4.1			Humidity	TPR 5146	3.4.4	4
				TPR 5084	4.2.5	77
4.2			Tactical Opening	D2-9978		9
4.3			Op. Aft. Sim. Nucl. Blast	D2-9569, Vol. II Sect. VIII & IX	<b>∓</b> I	9

A cross reference of Boeing Part Numbers and Talley Industry Part Numbers is shown on Table 2.

Tests were conducted on a 10-20969-6 Cartridge that is similar to the 10-20969-15 Cartridge delivered as part of 25-23712-27. (See Table 2) N

These are acceptance tests performed on each individual delivered item.

These tests were performed on a 5290-3 Cartridge that is similar to a 10-20969-15 Cartridge. (see Table 2)

These tests were performed on a 10-20969-3 das Generator

These tests were performed on a 10-20969-3 Gas Generator and 10-20969-4 Actuator

9

TABLE I (contf. ed)

. *		TABL	TABLE I (cont. ed)		• •	رود
S-133-111-1-9 Basic Spec.	S-133-111-1-9 Basic Spec.	133-111-1-9 Basic Spec.				<b>8</b>
Qualification Test Requirement	Qualification D2-7256	.cati <b>on</b> 256	Test	Test Accomplished	t Sped	
D2-7256-1	Requirement	Test	Title	Document	Paragraph	Comments
3.4	3.5.1.6	4.4.3.1.4	Shock	TPR-5084 T2-2076	5.6	<b>.</b>
				TPR-5146		<b>.</b>
3.4	3.5.1.7	4.4.3.1.5.4	Life	TPR 5146	3.7	<b>†</b>
3.4	3.5.2.1	4.4.3.2	Temperature	TPR 5146	3.6	<b>-</b> ‡
3.4	3.5.2.2	4.4.3.2	Altitude	TPR 5146	3.6	-4
T.4			Humidity	TPR 5146	3.4.4	.aj-
			•	TPR 5084	4.2.5	77
4.2			Tactical Opening	D2-9978		9
				Vel. XXVII		,
4.3			Op. Aft. Sim. Nucl.	D2-9569, Vol. II	<b>#</b>	9
			19erg	Secto VIII & TV		

A cross reference of Boeing Part Numbers and Talley Industry Part Numbers is shown on Table 2.

Tests were conducted on a 10-20969-6 Cartridge that is similar to the 10-20969-15 Cartridge delivered as part of 25-23712-27. (See Table 2)

These are acceptance tests performed on each individual delivered item.

These tests were performed on a 5290-3 Cartridge that is similar to a 10-20969-15 Cartridge. (See Table 2)

These tests were performed on a 10-20969-3 Gas Generator

These tests were performed on a 10-20969-3 Gas Generator and 10-20969-4 Actuator

Boeing Part No.	ralley Industries Part No.	Nomenclature	Configuration
10-20969-6	5290	Cartridge	The 5290 Cartridge did not satisfactorily complete the
None	5290-3	Cartridge	accelerated aging part of the qualification test. The 5290=3 Cartridge using a new propellant was retested
10-20969-15	5290-9	Cartridge	and satisfactorily passed all qualification tests. During the qualification test, the housing threads were
-			staked to prevent motion of the Housing relative to the Propellant Case. Also, during the test, a new 90047-1 Shorting Cap was installed on the Firing Head Assy replacing the old Shorting Cap. At the completion of the qualification test, the 5290 Cartridge drawing was changed to show a new 5290-9 Cartridge drawing was the above changes made on the 5290-3 Cartridge during the qualification test.
10-20969-3	2100-14	Gas Generator	The 10-20969-3 Gas Generator used a 5290 Cartridge.
10-5066-14	2100-27	Gas Generator	Ine 10-20969-14 Gas Generator used a 5290-9 Cartridge. The 10-20969-3 and 10-20969-14 are otherwise identical.
10-50969-4	4300-11	Actuator	
10-20969-7	2100-16	Mounting Kit	

#### .5. NOTES

5.1 Relative to any reference in the test reports listed in Table I to "preproduction tests", such reference is construed as "qualification tests".

D2-7256-2 Page 11